Abstract

Title: Quantification of plantar pressure distribution and geometry of forefoot according to the character of shoes

Objectives: The main purpose of this thesis is to describe and verify the changes in the sole of the foot according to the style of shoe which are manifested by changes in the values of the maximum pressure, contact area, contact time and changes in pressure time integral. The next object is to verify the changes in forefoot geometry according to the style of shoes.

Methodology: The sample consisted of 6 healthy women of average age 25 ± 1 year. All study participants reported wearing high-heeled shoes occasionally which means not more than twice per week. The measurement was realized with the Pedar-X in-shoe pressure measurement system (Novel) and motion capture system Qualisys. Results were analysed statistically using Wilcoxon test. Statistical significance was set at $p < 0,05$.

Results: From the received data we could find out the changes that footwear causes in healthy people. The findings of this study indicate that the use of different style of shoes affect all measured parameters such as maximum pressure, contact area, contact time and pressure time integral.From the experiment evaluation, it is clear that the style of shoes may also affect the geometry of forefoot.

Keywords: shoe, high heels, plantar pressure, gait, forefoot